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Utilisations scientifiques et militaires des planeurs captifs cerfs-volants. pt. 1-2. 26, 14 p. illus. 24 cm. (Bulletin mensuel de l'assoc. des anciens élèves de l'école centrale lyonnaise. 19e année. Août-sept. 1922.)

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Sonnenschein und Regen und ihre Einflüsse auf die ganze Schöpfung. Eine populäre Witterungskunde für Nichtmeteorologen. Weimar. 1870. x, 242 p. figs. map. 21 cm.

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Ihne, E.

Phænologische Mitteilungen, Jahrgang 1921. Darmstadt. 1922. 34 p. 23½ cm. (Arbeiten der Landwirtschaftskammer für Hessen. H. Nr. 31.)

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Dell' influenza dell' aria su i temperamenti, malattie, ed inclinazioni degli uomini. Livorno. 1765. 126 p. 21 cm.

Malde, O. G.

Local forecasting of his own cranberry bog very important for the Wisconsin cranberry grower. p. 25-29. 23 cm. (Extr. Wisconsin state cranberry growers' assoc. 35th annual meeting, Jan. 10, 1922.)

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Die moderne Meteorologie. Sechs Vorlesungen, gehalten auf Veranlassung der meteorologischen Gesellschaft zu London. Deutsche orig.-Auszgabe. Braunschweig. 1882. x, 217 p. plates. 21½ cm.

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Reform of the calendar. [Washington. 1922.] 3 p. 24½ cm. [Repr.: Weather bureau topics and personnel.]

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Manuel élémentaire de météorologie. Zi-ka-wei. 1914. unp. 23 cm. [Text in Chinese.]

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New air world; the science of meteorology simplified. Boston. 1922. xii, 326 p. illus. plates. charts. 21 cm.

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Tableau du climat des Antilles, et des phénomènes de son influence sur les plantes, les animaux et l'espèce humaine. Paris. 1817. 84 p. 21 cm.

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Frequented ways: a general survey of the land forms, climates, and vegetation of western Europe, considered in their relation to the life of man; including a detailed study of some typical regions. London. 1922. xi, 231 p. illus. plates. 23 cm.

Novakovsky, Stanislaus.

Climatic provinces of the Russian Far East in relation to human activities. New York. [1922.] p. 100-115. illus. 25½ cm. (Repr.: Geographical review. v. 12, Jan., 1922.)

Effect of climate on the efficiency of the people of the Russian Far East. p. 275-283. 27 cm. (Extr.: Ecology. v. 3, Oct., 1922.)

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Sondatges de l'atmosfera lliure a Barcelona amb globus pilots, des del 19 de Setembre de 1921 al 30 de Setembre de 1922. Barcelona. 1922. 24 p. 22 cm. (Servei meteorològic de Catalunya. Notes d'estudi. N.º 12.)

U. S. Bureau of efficiency.

Report on the statistical work of the United States government submitted to congress in pursuance to the acts of March 1, 1919, and November 4, 1919. Washington. 1922. xv, 405 p. plates (fold.) 23½ cm. [Weather bureau, p. 174-181.]

Visser, S. W.

Inland and submarine epicentra of Sumatra and Java earthquakes. Batavia. 1922. 14 p. plates. 27½ cm. (K. Mag. en met. obs. te Batavia. Verhandl. no. 9.)

Zealley, P. Raymond.

Introduction to forecasting weather. Cambridge. 1922. 32 p. illus. front. 19 cm.

RECENT PAPERS BEARING ON METEOROLOGY AND SEISMOLOGY.

C. F. TALMAN, Meteorologist in Charge of Library.

The following titles have been selected from the contents of the periodicals and serials recently received in the Library of the Weather Bureau. The titles selected are of papers and other communications bearing on meteorology and cognate branches of science. This is not a complete index of all the journals from which it has been compiled. It shows only the articles that appear to the compiler likely to be of particular interest in connection with the work of the Weather Bureau.

American meteorological society. Bulletin. Worcester, Mass. v. 3. 1922.

Visher, Stephen Sargent. Local climates in the tropics. p. 119-121. (Sept.)

Alter, J. Cecil. Weather exhibit. p. 158-159. (Nov.)

Brooks, Charles F. The coming winter in the northeastern United States. p. 151-152. (Nov.)

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Campbell, E. S. A preliminary plan for teaching pupils of junior high school age some facts about the atmosphere and weather. p. 153-156. (Nov.)

Garrett, C. C. Temperature and the codling moth. p. 153. (Nov.)

Annalen der Hydrographie und maritimen Meteorologie. Berlin. 50. Jahrg. 1922.

Kuhlbrot, Erich. Das Windsystem im Fuss der Sachsenwaldtrombe von 28. Juni 1920. p. 151-158. (Mai.)

Thorade, H. Die ablenkende Kraft der Erdumdrehung. p. 150-154. (Mai.)

Bongards, Hermann. Der tägliche Gang des Luftdrucks. p. 169-182. (Juni.)

Casten, Gerhard. Neuere englische Bezeichnungen für Windarten. p. 206-209. (Juli.)

Wegener, Kurt. Die Entstehung des Nebels. p. 209-211. (Juli.)

Benkendorff. Neuerungen im deutschen drahtlosen Wetterachrichtendienst. p. 235-237. (Aug.)

Brennecke, W. E. von Drygalskis Werk über das Eis der Antarktis und der subantarktischen Meere. p. 222-229. (Aug.)

Petersen, P. Die Eisverhältnisse an den deutschen Küsten während des Winters 1921/22. p. 244-251. (Sept.)

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Gorczański, Ladislas. Sur la situation climatique de la Pologne et sur son degré de continentalisme. p. 375-388.

Jaumotte, J. Sur le déplacement du zéro dans l'électromètre de Mascart. p. 363-368.

L., E. Le tremblement de terre de Coquimbo (La Serena) et du Chili. p. 390-393.

Lagrange, E. Ole Roemer et le thermomètre Fahrenheit. p. 357-363.

Navarro, Manuel Maria S. Le barographe à mercure "Loyola." p. 371-375.

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- Chisholm, Edward N. Hydrologic record of the Mississippi floods from 1882 to 1922. Official statement of gage heights from Cairo to the Gulf in all the high waters of the past 40 years—Record of the present status of levee construction. p. 112-116.
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- Brownlee, John. Rainfall and scarlet fever. p. 386-387.
- The drought of 1921. p. 270-285.
- Glasspoole, John. The fluctuations of annual rainfall. p. 288-300.
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- Leonardi, Evelino. Il freddo, il caldo e la salute dell'uomo. p. 147-150.
- La morte del nostro collaboratore Antonio Favaro. p. 199. [Obituary.]
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- Fantoli, Amilcare. L'osservatorio di Tripoli e la rete meteorologica della Libia. p. 186-187.
- Paoloni, D. B. Sui limiti del giorno piovoso. p. 170-173.
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- Shaw, Napier. Change of wind on the turn of the tide. p. 269-270. (Nov.)
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- Mill, Hugh Robert. The evolution of climate: A review. p. 295-297. (Dec.)
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- Köppen, W. Warum ist das Mittel aus den täglichen Extremen höher als das 24-stündige Temperaturmittel? p. 363.
- Marten, W. Zur Frage der absoluten pyrheliometrischen Skala. p. 342-344.
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- Shaw, Napier. Meteorological theory in practice. p. 762-765. (Dec. 9.) [Review of L. F. Richardson's "Weather prediction by numerical process."]
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SOLAR OBSERVATIONS.

SOLAR AND SKY RADIATION MEASUREMENTS DURING DECEMBER, 1922.

By HERBERT H. KIMBALL, In Charge, Solar Radiation Investigations.

For a description of instruments and exposures and an account of the method of obtaining and reducing the measurements, the reader is referred to this REVIEW for April, 1920, 48: 225.

From Table 1 it is seen that direct solar radiation intensities averaged very close to normal values for December at all three stations.

Table 2 shows that the total solar and sky radiation received on a horizontal surface averaged below the December normal at Washington and Madison, and considerably above the normal at Lincoln. For the year the record for Washington shows a deficiency of 3.5 per cent of the annual mean, and the record for Madison a deficiency of 1.7 per cent.

Sky light polarization measurements made on six days at Washington give a mean of 58 per cent, with a maximum of 64 per cent on the 19th. These are average polarization values for December at Washington. At Madison no measurements were obtained during the month, as the ground was covered with snow after the 13th.

TABLE 1.—Solar radiation intensities during December, 1922.

[Gram-calories per minute per square centimeter of normal surface.]
Washington, D. C.

Date.	Sun's zenith distance.									
	8 a.m.		78.7°		75.7°		70.7°		60.0°	
	75th meridian time.									
	e.	5.0	4.0	3.0	2.0	*1.0	2.0	3.0	4.0	5.0
Dec. 2	mm.	cal.	mm.							
5	3.15			1.30		0.98	0.86	0.74	0.62	0.52
6	7.57			1.12		0.98	0.86	0.75	0.63	0.53
10	2.06	0.78	0.60	1.03	1.06	0.86	0.86	0.86	0.86	0.86
13	3.15			1.02		0.98	0.86	0.75	0.63	0.53
18	1.45			1.24	1.47	1.06	0.87	0.75	0.63	0.53
20	1.78		0.71	0.89						0.62
21	3.99			1.12		0.86	0.73	0.61	0.49	0.39
29	3.00	0.79	0.66	1.19	1.43	1.01	1.21	1.11	1.00	0.89
30	2.26	0.93	1.02	1.12						0.16
Means.....	0.83	0.90	1.06	1.19		0.99	0.85	0.73	0.61	0.51
Departures.....	+0.05	+0.01	+0.02	-0.03		-0.02	-0.03	-0.03	-0.03

TABLE 1.—Solar radiation intensities during December, 1922—Con.

Madison, Wis.

Date.	Sun's zenith distance.										Noon.
	9 a.m.		78.7°	75.7°	70.7°	60.0°	0.0°	60.0°	70.7°	75.7°	78.7°
	75th meridian time.		Air mass.								Local mean solar time.
	e.	5.0	4.0	3.0	2.0	*1.0	2.0	3.0	4.0	5.0	e.
Dec. 2	mm.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	mm.
5	2.36			1.06	1.18	1.12					3.45
13	1.32			1.00							1.80
18	0.81										1.12
Means.....	0.46			1.12	1.18	1.11					0.58
Departures.....	+0.13			-0.02	-0.02					

Lincoln, Nebr.

Dec. 5.....	1.45	0.84	0.90	1.23		1.65		1.01		1.32
12.....	0.74	1.16	1.18	1.35		1.56		0.56		0.56
15.....	1.07			1.20		1.49		1.22	1.05	1.60
20.....	1.68			1.23				1.18		1.68
22.....	3.30		1.00							3.30
Means.....	(1.00)		1.03	1.25				1.14	(1.03)	(0.89)
Departures.....	+0.08	±0.00	+0.02					-0.05	-0.01	-0.06

* Extrapolated.

TABLE 2.—Solar and sky radiation received on a horizontal surface.

Week beginning.	Average daily radiation.			Average daily departure for the week.			Excess or deficiency since first of year.		
	Wash- ington.	Madi- son.	Lin- coln.	Wash- ington.	Madi- son.	Lin- coln.	Wash- ington.	Madi- son.	Lin- coln.
Dec. 3.....	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.
10.....	123	121	160	-34	-2	-18	-3,864	-1,826
17.....	85	134	191	-66	+9	+15	-4,327	-1,760
24.....	148	125	210	-3	-1	+35	-4,347	-1,770